

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.-41. (Canceled).

42. (Currently Amended) A method of depositing ionized molecules on a surface of an object in a vacuum system, the method comprising:

plasma-treating the surface of the object in the vacuum system; and

depositing ionized molecules on the surface of the object in the vacuum system by directing a beam of ionized molecules at the object.

43. (Currently Amended) The method of claim 42 wherein the plasma-treating the surface of the object is ~~plasma-treated~~ occurs prior to the depositing ionized molecules on the surface of the object.

44. (Currently Amended) The method of claim 42 wherein the depositing ionized molecules ~~are deposited on the surface of the object~~ occurs prior to the plasma-treatment treating of the object.

45. (Original) The method of claim 42 further comprising generating ionized molecules by at least one the following methods: electrospray ionization; Atmospheric Pressure Chemical Ionization (APCI); Fast-Atom Bombardment (FAB); Liquid Secondary Ion Mass Spectrometry (LSIMS); Continuous FAB; and Matrix-Assisted Laser Desorption Ionization (MALDI).

46. (Original) The method of claim 42 wherein depositing ionized molecules comprises: introducing ionized molecules into the vacuum system; and guiding ionized molecules to the surface of the object.

47. (Original) The method of claim 46 wherein guiding ionized molecules comprises funneling ionized molecules using an ion funnel.

48. (Original) The method of claim 46 wherein guiding ionized molecules includes using multipole ion optics.

49. (Currently Amended) The method of claim 42, further comprising introducing ionized molecules and a solvent into the vacuum system and separating ionized molecules from the solvents-solvent from ionized molecules.

50. (Canceled).

51. (Currently Amended) The method of claim 42, further comprising measuring an ion current of the beam of ionized molecules.

52. (Original) The method of claim 42, further comprising controlling an ion kinetic energy level of ionized molecules.

53. (Original) The method of claim 52 wherein the kinetic energy level is controlled by adjusting an electrostatic potential of the surface.

54-55. (Canceled).

56. (Original) The method of claim 42, further comprising positioning the surface of the object to facilitate plasma-treatment and depositing of ionized molecules.

57. (Currently Amended) The method of claim 42 wherein the plasma-~~treatment~~ treating comprises ~~at least one of the following: plasma etching of the surface; opening of micropores of the surface; micro-roughening of the surface; coating the surface with polymeric substances; and plasma cleaning of the surface.~~

58. (Currently Amended) The method of claim 42 wherein the plasma-~~treatment~~ treating produces dangling bonds on the surface.

59. (Currently Amended) The method of claim 42 wherein the plasma-~~treatment~~ treating comprises substitution of chemical groups on the surface.

60. (Currently Amended) The method of claim 42 wherein the plasma-~~treatment~~ treating comprises addition of chemical groups onto the surface.

61. (Currently Amended) The method of claim 42 wherein the plasma-~~treatment~~ treating comprises treatment with at least one of the following as a process gas: O₂, N₂, N₂O, He, Ar, NH₃, CO₂, CF₄ and air.

62. (Currently Amended) The method of claim 42, further comprising controlling the plasma-~~treatment~~ treating by adjusting a power input to a plasma-generator.

63. (Currently Amended) The method of claim 42, further comprising controlling the plasma-~~treatment~~ treating by adjusting a gas-flow rate to a plasma-generator.

64. (Currently Amended) The method of claim 42, further comprising controlling the plasma-~~treatment~~ treating by changing a type of gas feed to a plasma-generator.

65. (Currently Amended) The method of claim 42 wherein the object is irregularly shaped porous.

66. (Original) The method of claim 42 wherein the surface on which ionized molecules are deposited is a stainless steel surface.

67. (Original) The method of claim 42 wherein the surface on which ionized molecules are deposited is a surface of polymeric material.

68. (Original) The method of claim 46 wherein guiding of ionized molecules comprises generating potential fields.

69. (Original) The method of claim 42 wherein the ionized molecules comprise biomolecules.

70. (Original) The method of claim 42 wherein the ionized molecules comprise enzymes.

71. (Original) The method of claim 42 wherein the ionized molecules comprise hyaluronic acid.

72. (Original) The method of claim 42 wherein the ionized molecules comprise sugar.

73. (Original) The method of claim 42 wherein the object is a medical device.

74. (Canceled).

75. (Original) The method of claim 42, further comprising manipulating the object to deposit ionized molecules on an additional surface of the object.

76. (Original) The method of claim 75 wherein ionized molecules are deposited on the object in a pattern.

77. (Original) The method of claim 46 wherein guiding ionized molecules comprises using an electrostatic lens.

78. (Currently Amended) The method of claim 42, further comprising manipulating the object through an air-to-vacuum-to-air differentially pumped interface prior to the plasma-treating.

79. (Original) The method of claim 46 wherein guiding ionized molecules comprises generating a magnetic field.

80. (Original) The method of claim 46 wherein guiding ionized molecules comprises using an aperture.

81. (Currently Amended) The method of claim 42 wherein the object is a ~~long, thin object~~ suture.

82.-83. (Canceled).

84. (Currently Amended) The method of claim 42 wherein the plasma ~~treatment-treating~~ comprises coating the surface with a polymeric substance of a controlled molecular weight.

85. (Currently Amended) The method of claim 42 wherein the plasma ~~treatment-treating~~ comprises coating the surface with a polymeric substance of -a controlled chemical polarity.

86. (New) The method of claim 42 wherein the plasma-treating comprises plasma-cleaning of the surface.

87. (New) The method of claim 42 further comprising manipulating the object through a vacuum-to-air differentially pumped interface during the depositing of ionized molecules.

88. (New) A method of depositing molecules on an object, the method comprising:

passing a first portion of an object through an air-to-vacuum differentially pumped interface into a vacuum system;

plasma-treating a surface of the first portion of the object in a first treatment chamber of the vacuum system;

depositing ionized molecules on the surface of the first portion of the object in a second treatment chamber of the vacuum system; and

passing the first portion of the object through a vacuum-to-air differentially pumped interface out of the vacuum system.

89. (New) The method of claim 88 wherein the depositing ionized molecules on the surface of the first portion of the object occurs before the plasma-treating of the surface of the first portion of the object.

90. (New) The method of claim 88 wherein the object is a suture.

91. (New) The method of claim 88 wherein a second portion of the object is outside of the vacuum system when plasma-treating of the surface of the first portion of the object occurs.

92. (New) The method of claim 91, further comprising:

passing the second portion of the object through the air-to-vacuum differentially pumped interface into the vacuum system; and

plasma-treating a surface of the second portion of the object in the first treatment chamber of the vacuum system.

93. (New) A method of depositing molecules on an object, the method comprising:

plasma-treating a surface of the object in a vacuum system; and

depositing molecules on the surface of the object in the vacuum system by directing intact, ionized molecules at the object in the absence of a plasma.

94. (New) The method of claim 93 wherein directing intact, ionized molecules at the surface of the object comprises directing a beam of intact, ionized molecules at the surface of the object.

95. (New) A method of depositing molecules on an object, the method comprising:

plasma-treating a surface of the object in a vacuum system; and

depositing ionized molecules on the surface of the object by:

generating ionized molecules in a gas;

separating the ionized molecules from the gas to produce a beam of ionized molecules; and

directing the beam of ionized molecules at the surface of the object.

96. (New) The method of claim 95 wherein the beam of ionized molecules is comprised primarily of negatively charged molecules.